



APPENDIX A:

INVENTORS' DECLARATION

UNDER 37 CFR 1.131

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Levine, et al.
Serial No.: 10/044,802
Filing Date: 01/11/2002
For: LOW COST INERTIAL NAVIGATOR
Art Unit: 3663
Conf: 8342
Examiner: Tuan To

DECLARATION OF INVENTORS UNDER 37 CFR 1.131

I, Kevin C. Baxter declare unequivocally concerning the subject matter claimed in the above-identified application that:

1. I, along with my co-inventors, conceived and invented the entire subject matter of the above-identified patent application.
2. All of the acts of invention described herein took place in the United States.
3. Prior to July 20, 2000, we conceived and/or reduced to practice the idea of a navigation system having an integrated GPS receiver, inertial measurement unit (gyroscope and accelerometer), barometer and magnetometer. As is set out in more detail below, subsequent to July 20, 2000, we worked diligently to further reduce to practice and improve various embodiments of this invention until our patent application was filed on January 11, 2002.
4. Between June 3, 2000 and January 11, 2002, we built several experimental prototypes which were carried as payloads on amateur rockets to gather flight information and, in

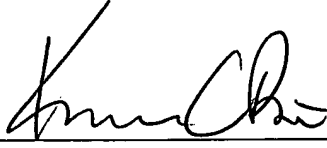
some cases, manage a portion of the recovery. While these tests were not a complete reduction to practice of our invention, the circuit boards remained our property and under our control during and after the test flights.

5. On June 3, 2000, a circuit board having a GPS receiver, a barometric sensor, and MEMS inertial sensors was flown on a rocket to gather flight performance data for use in development of software for the present invention. Unfortunately, the rocket cocked on launch and due to a relative flat launch angle of attack and low thrust flew a horizontal trajectory before crashing. The circuit board was destroyed in the crash.
6. Attached hereto as Appendix B is a true and accurate picture of the remains of the circuit board of the June 3, 2000 flight.
7. On June 6, 2000, we produced circuit board artwork for a board having a GPS receiver, a barometric sensor, inertial sensors, magnetometers, and telemetry (Appendix C).
8. On July 23, 2000 software was completed, and finally compiled on August 31, 2000, for a circuit board having a GPS receiver and telemetry. This board was intended to fly in late September 2000 but the launch was scrubbed (Appendix D, p. 1).
9. On September 18, 2000, software was completed for testing the three-axis magnetometer on a special test board (Appendix D, p. 1).
10. On October 10, 2000, the circuit board artwork was updated for the board of June 6, 2000 (Appendix E).
11. On November 7, 2000, the circuit board was modified to include reference designators for components (Appendix F).
12. On November 18, 2000, the circuit board was updated (Appendix G).

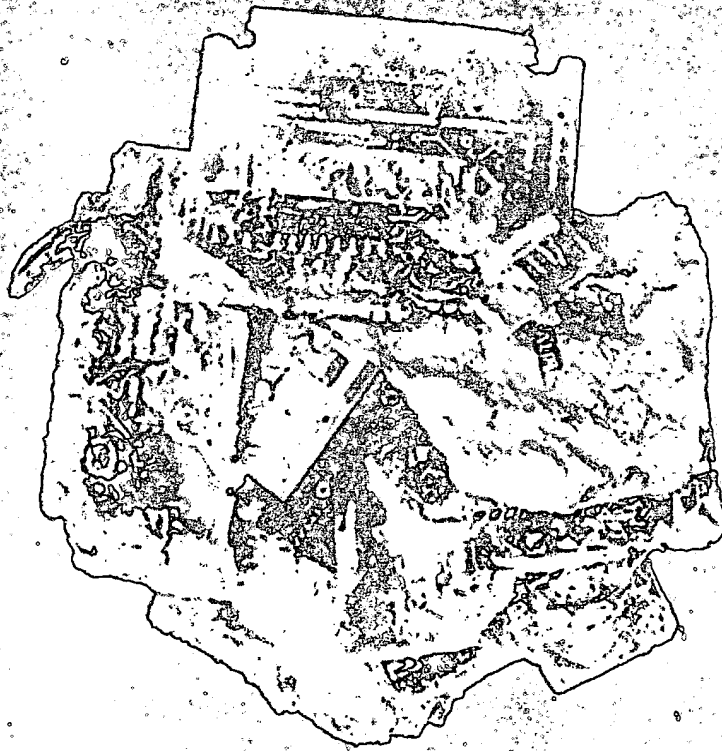
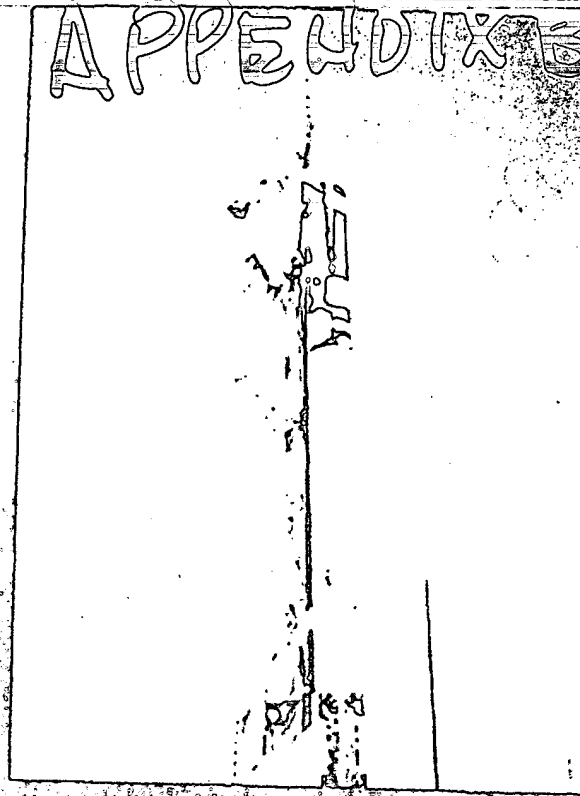
13. On December 4, 2000, the circuit board was modified for sensing wind (Appendix H) and software was updated (Appendix D, p. 3).
14. On January 17, 2001, the printed circuit board was updated (Appendix I).
15. On February 16, 2001, artwork was updated and printed circuit boards were ordered on April 5, 2001 (Appendix J).
16. On February 26, 2001, software was updated for the circuit board. (Appendix D, p. 3).
17. On March 2, printed circuit board for ground support for a launch scheduled May 12, 2001 (Appendix K).
18. On April 2, 2001, the software written on December 4, 2000 was recompiled for testing in anticipation of the May 12, 2001 launch (Appendix D, p. 3).
19. On May 12, 2001 a circuit board recording accelerometer and barometric data was flown on a rocket. The circuit board was recovered undamaged after the rocket suffered a catastrophic failure at approximately 600 feet above ground level (Appendix L).
20. On June 22, 2001 printed circuit board artwork was updated and new circuit boards were ordered on June 26, 2001 (Appendix M).
21. On July 6, 2001, printed circuit board artwork updated (Appendix N).
22. On August 22, 2001, printed circuit board artwork updated (Appendix O).
23. On September 4, 2001, an email was sent to Fred Holmes regarding printed circuit board order (Appendix P, p. 3).
24. On September 11, 2001 the World Trade Centers were destroyed. Understandably, waivers for upcoming launches were revoked by the FAA, delaying scheduled tests of the inventive system for a period of approximately three months.

25. On October 9, 2001 an email was sent to Fred Holmes regarding telemetry for an upcoming launch later in September (Appendix P, p. 2).
26. November 14, 2001 email from Kevin Baxter to Fred Holmes regarding patent application for the present invention (Appendix P, p. 1).
27. November 27, 2001 email from Kevin Baxter to Fred Holmes regarding upcoming December 2001 Kimbo launch carrying a circuit board to gather data (Appendix P, p. 4).
28. December 17, 2001 completed magnetometer test software (Appendix Q).
29. All of the documents that are contained within appendices that are attached hereto are true and accurate copies of these documents as they are found in our files.

I hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful, false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that willful, false statements may jeopardize the validity of this application or any patent issuing therefrom.


Kevin C. Baxter
11/26/2003
Date

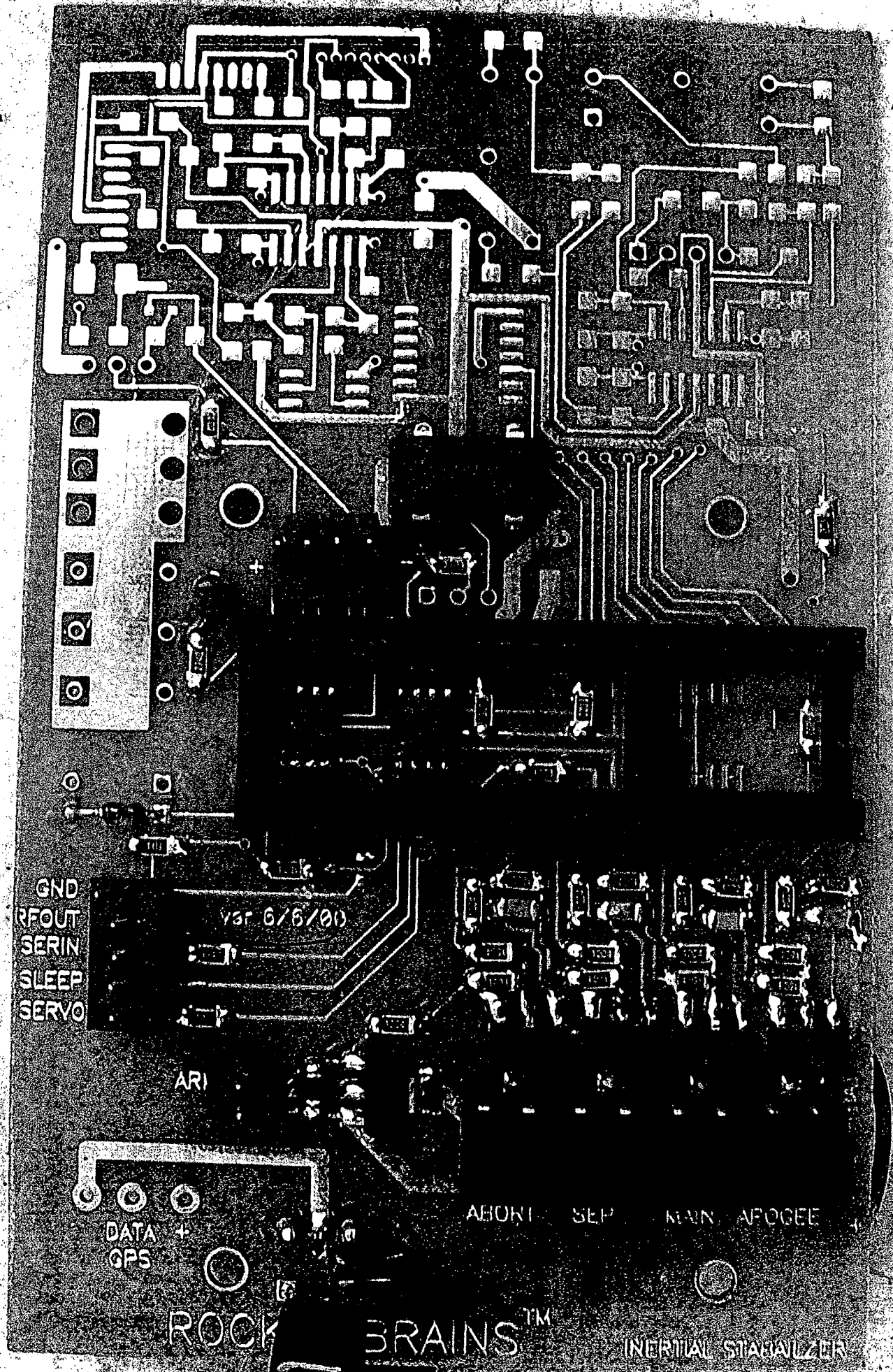
APPENDIX B



#4

JUNE 3, 2000

APPENDIX C



APPENDIX D

pbp

File Edit View Go Favorites Help

Back Forward Up Cut Copy Paste Undo Delete Properties Views

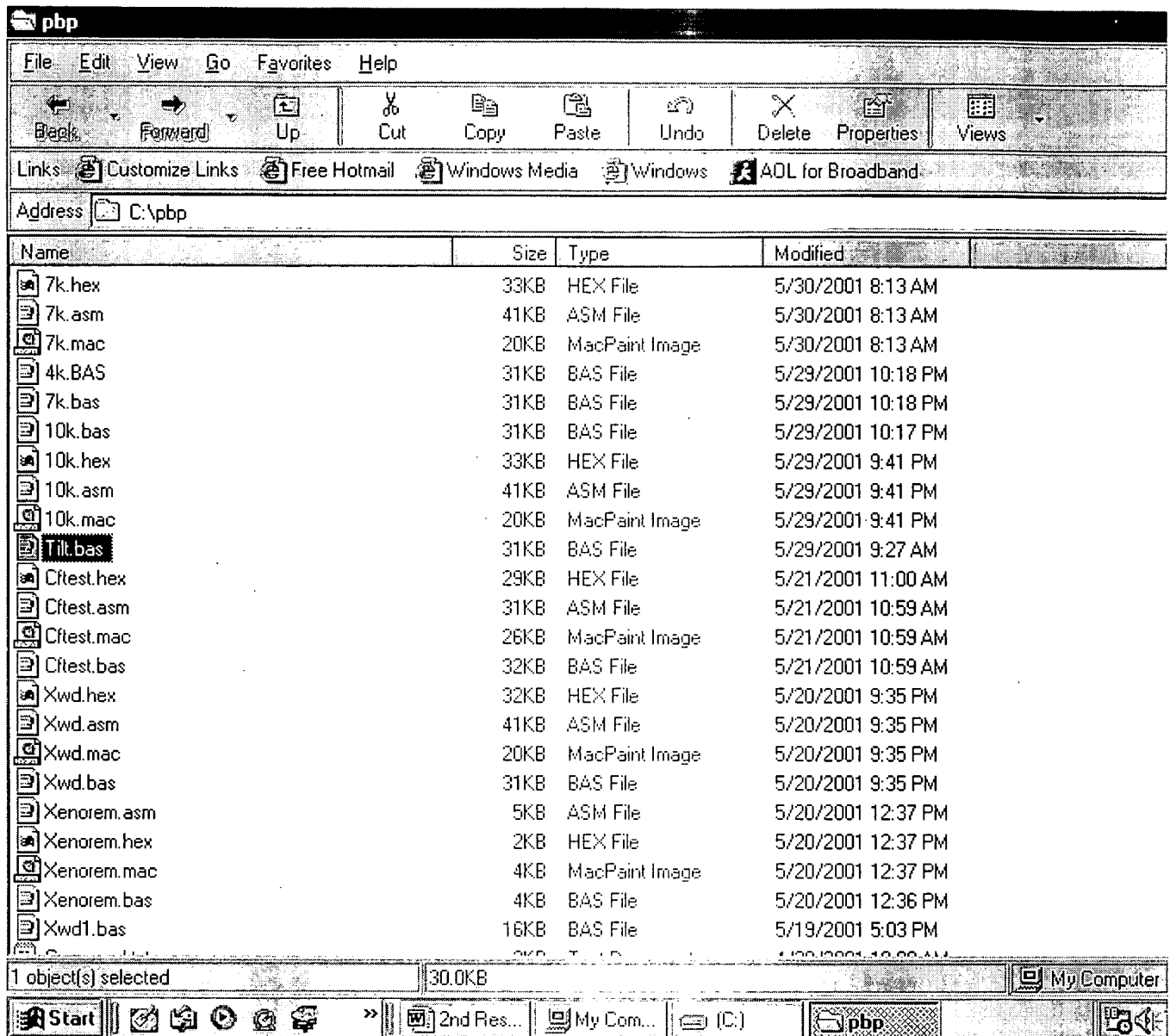
Links Customize Links Free Hotmail Windows Media Windows AOL for Broadband

Address: C:\pbp

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Balrem.hex	4KB	HEX File	11/4/2000 3:43 PM
Balrem.mac	6KB	MacPaint Image	11/4/2000 3:43 PM
Balrem.bas	7KB	BAS File	11/4/2000 3:42 PM
Mag.hex	3KB	HEX File	9/18/2000 1:26 AM
Mag.asm	4KB	ASM File	9/18/2000 1:26 AM
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Mag.bas	3KB	BAS File	9/18/2000 1:26 AM
Xremote.hex	4KB	HEX File	9/17/2000 11:53 PM
Xremote.asm	9KB	ASM File	9/17/2000 11:53 PM
Xremote.mac	6KB	MacPaint Image	9/17/2000 11:53 PM
xremote.bas	9KB	BAS File	9/17/2000 11:52 PM
Xn.asm	10KB	ASM File	9/17/2000 9:28 PM
Xn.hex	5KB	HEX File	9/17/2000 9:28 PM
Xn.mac	8KB	MacPaint Image	9/17/2000 9:28 PM
Xn.bas	10KB	BAS File	9/17/2000 9:28 PM
Xenrecvr.hex	6KB	HEX File	9/17/2000 6:22 PM
Xenrecvr.asm	12KB	ASM File	9/17/2000 6:22 PM
Xenrecvr.mac	8KB	MacPaint Image	9/17/2000 6:22 PM
xenrecvr.bas	10KB	BAS File	9/17/2000 6:12 PM
Bal1.bas	10KB	BAS File	9/16/2000 4:01 PM
Sorac50k.hex	14KB	HEX File	8/31/2000 2:06 PM
Sorac50k.mac	11KB	MacPaint Image	8/31/2000 2:06 PM

897 object(s) 15.2MB My Computer

Start 2nd... My ... (C:) pbp Fred Temp



pbp

File Edit View Go Favorites Help

Back Forward Up Cut Copy Paste Undo Delete Properties Views

Links Customize Links Free Hotmail Windows Media Windows ADL for Broadband

Address C:\pbp

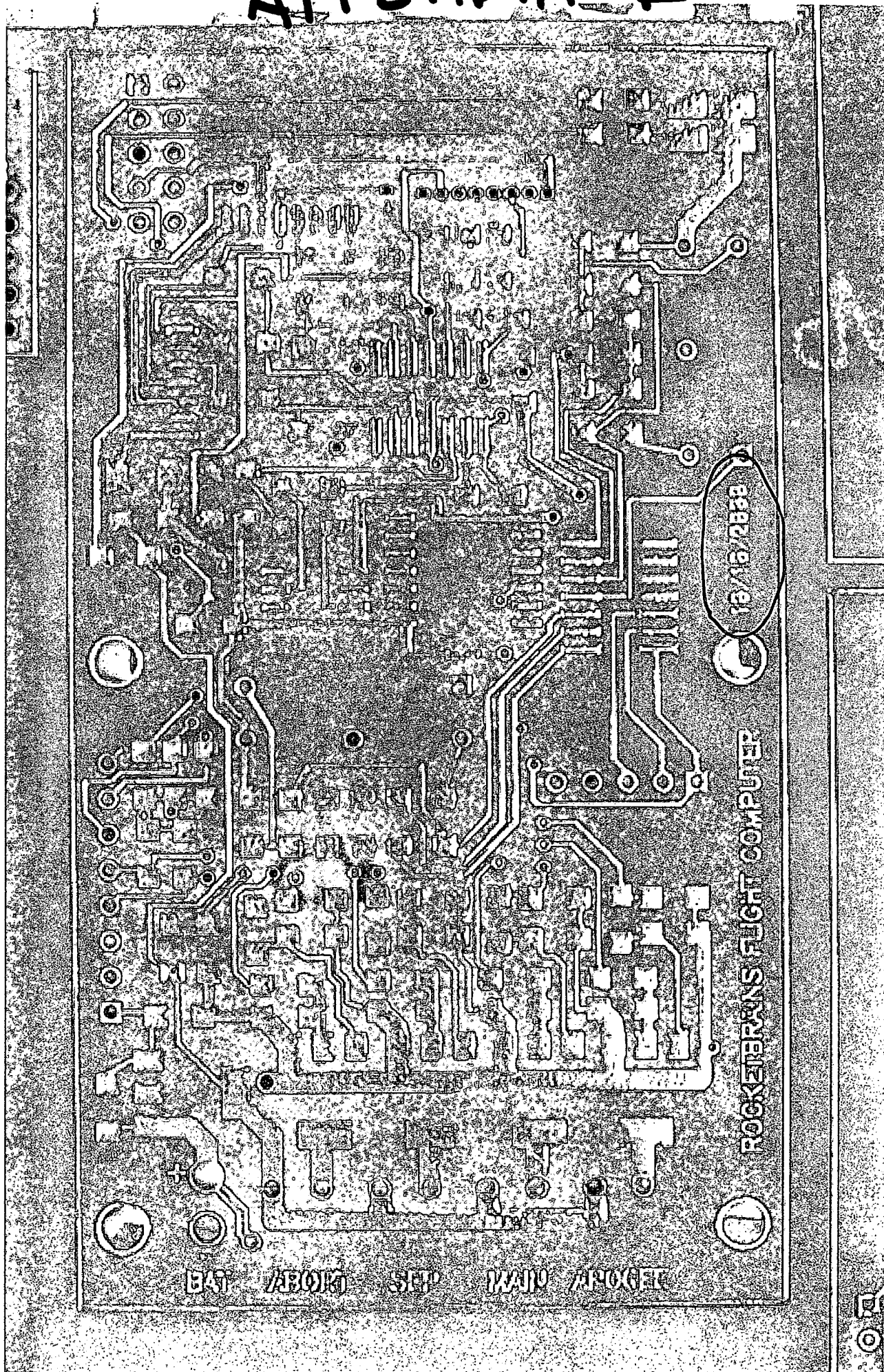
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Cflash.asm	19KB	ASM File	3/30/2001 2:56 PM
Cflash.mac	11KB	MacPaint Image	3/30/2001 2:56 PM
...	13KB	BAS File	2/26/2001 10:45 AM
Touch.bas	7KB	BAS File	2/25/2001 9:48 PM
Kevin.dat	1KB	DAT File	2/25/2001 8:37 PM
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Bal.hex	4KB	HEX File	1/13/2001 8:37 PM
Bal.asm	12KB	ASM File	1/13/2001 8:36 PM
Bal.mac	9KB	MacPaint Image	1/13/2001 8:36 PM
Bal.bas	11KB	BAS File	1/13/2001 8:36 PM
Fc.bas	3KB	BAS File	12/4/2000 2:10 PM
Balrem.asm	7KB	ASM File	11/4/2000 3:43 PM

897 object(s) 15.2MB My Computer

Start 2nd Respons... My Computer (C:) pbp

D 3

APPENDIX E



APPENDIX F

MAG

MAG

GYRO

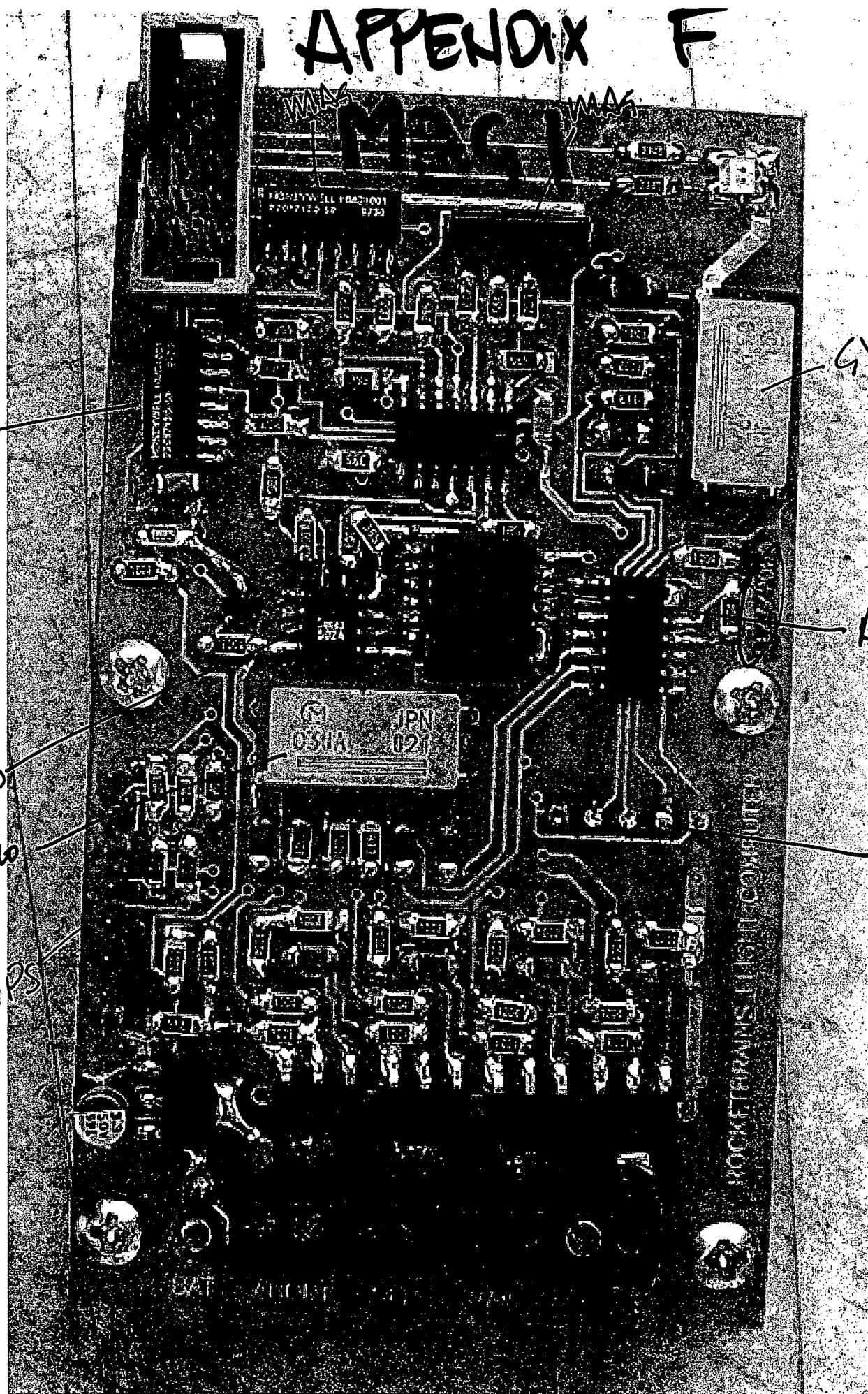
ACCEL

BARO

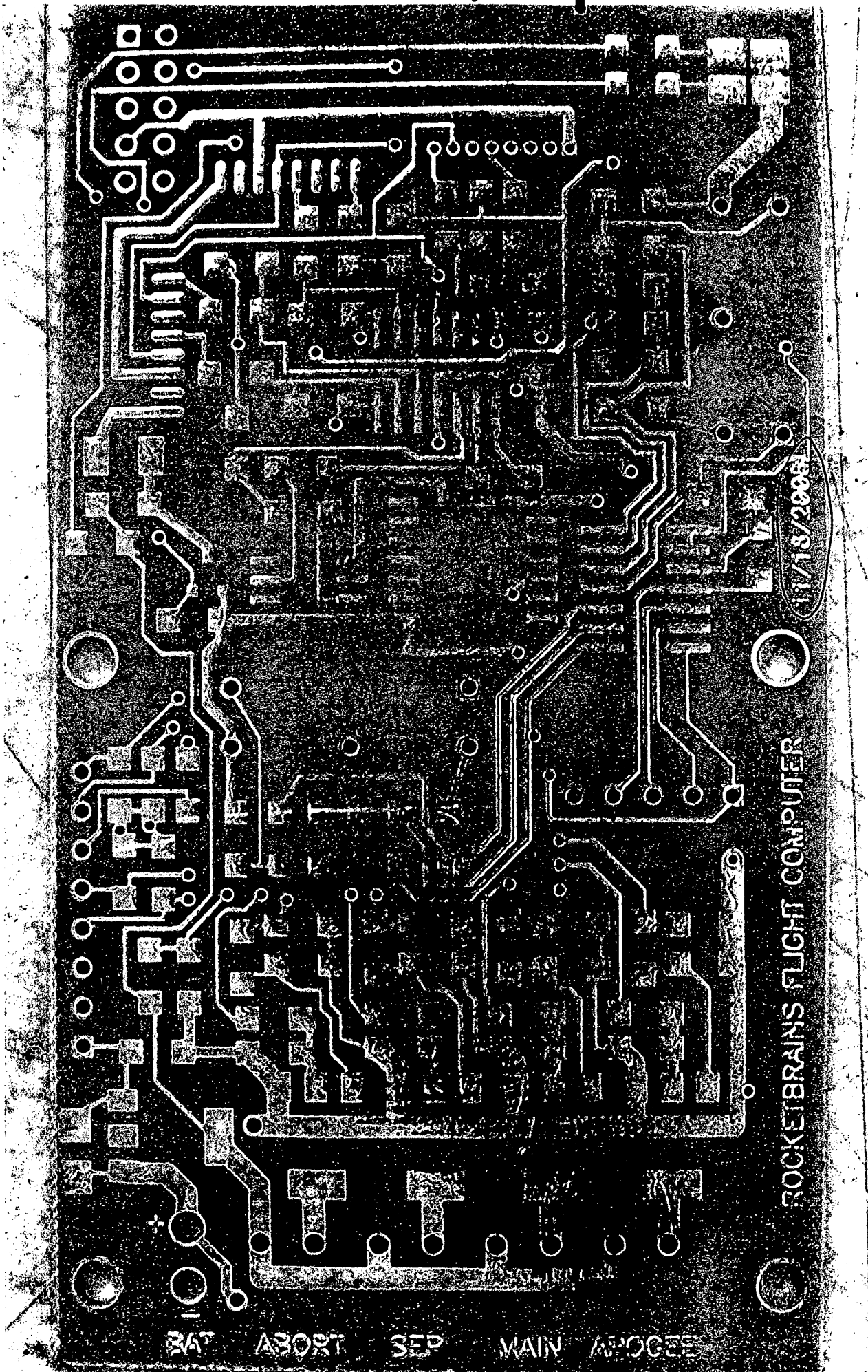
GYRO

GPS

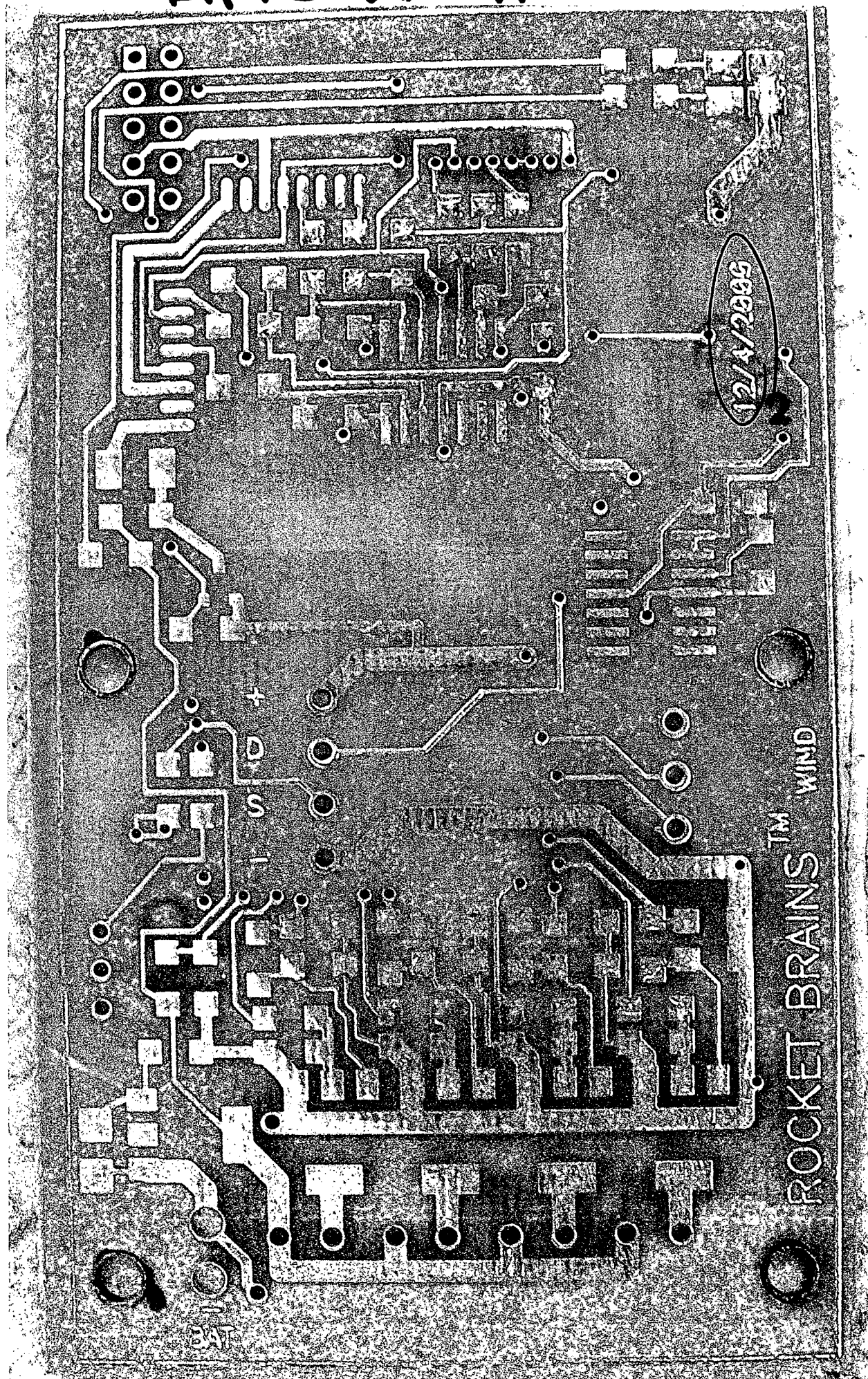
GYRO



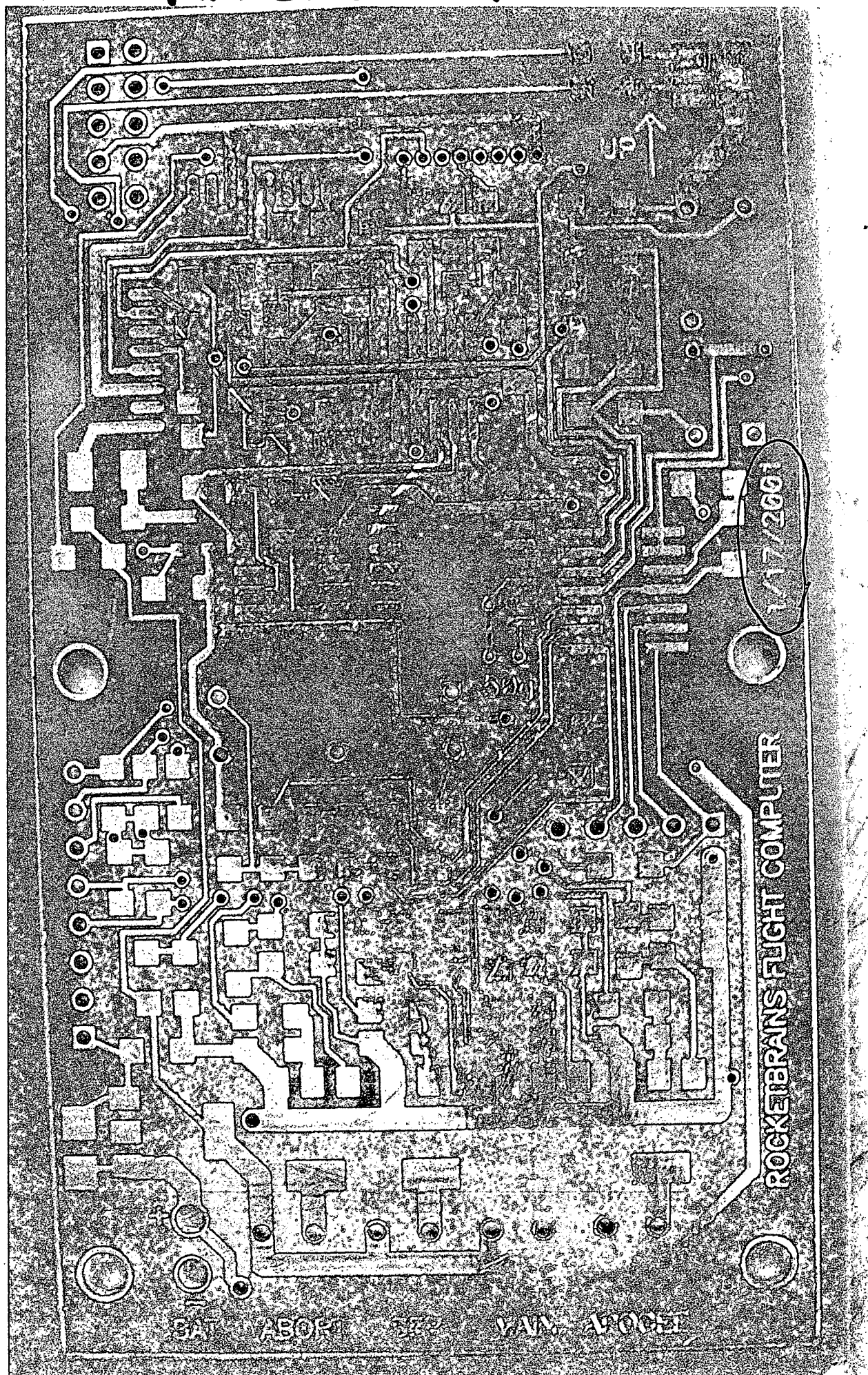
APPENDIX G

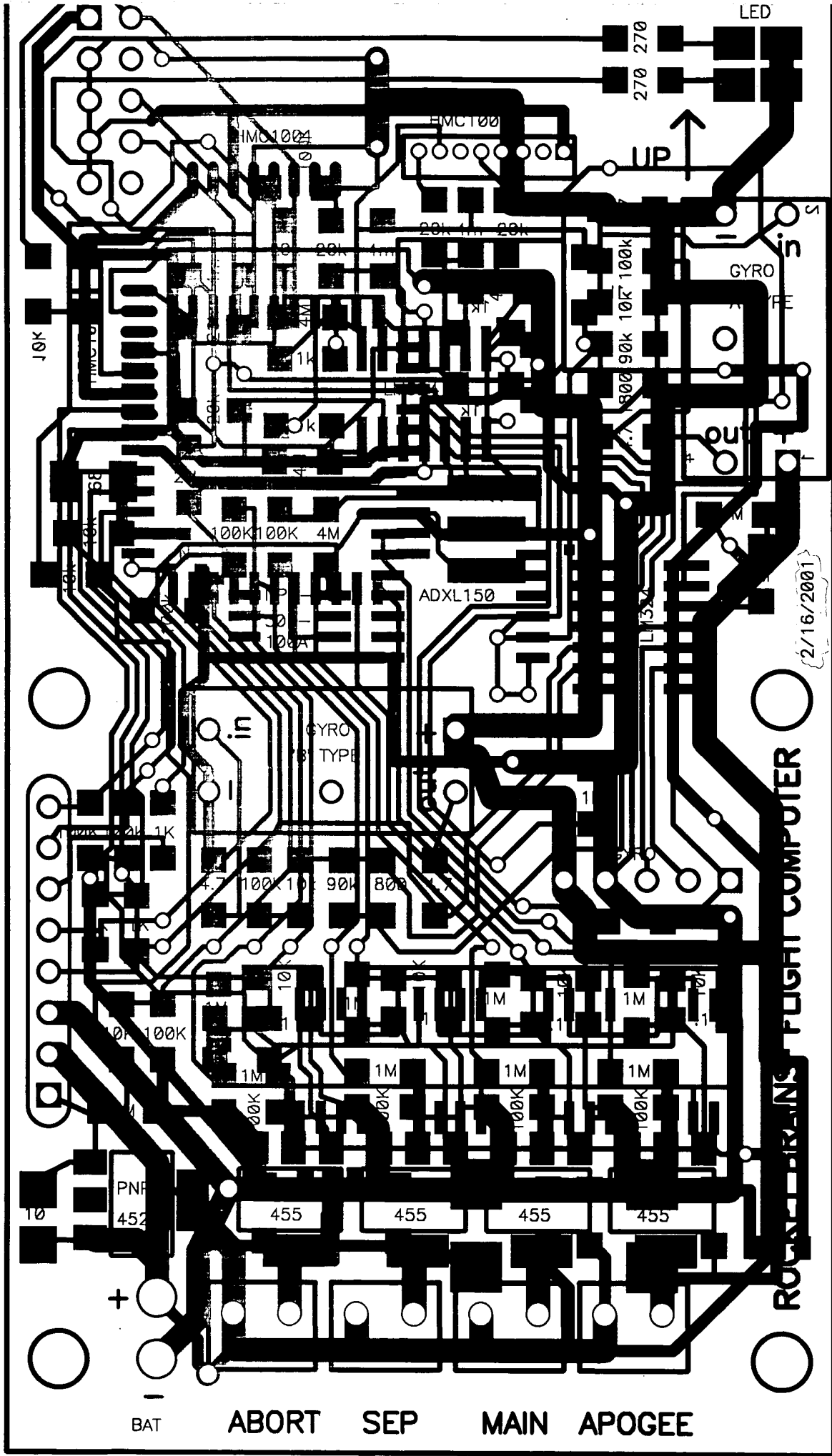


APPENDIX H

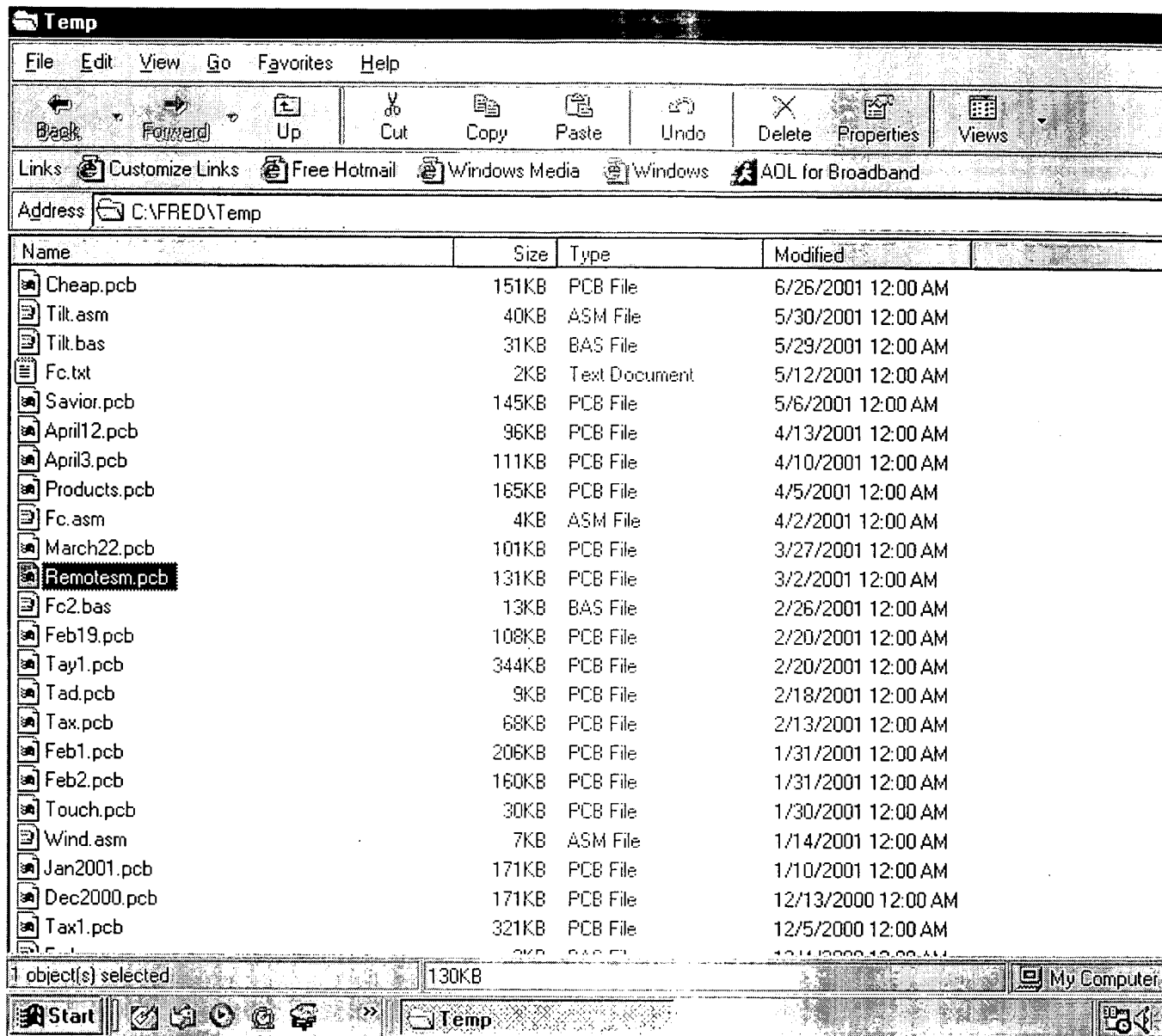


APPENDIX I



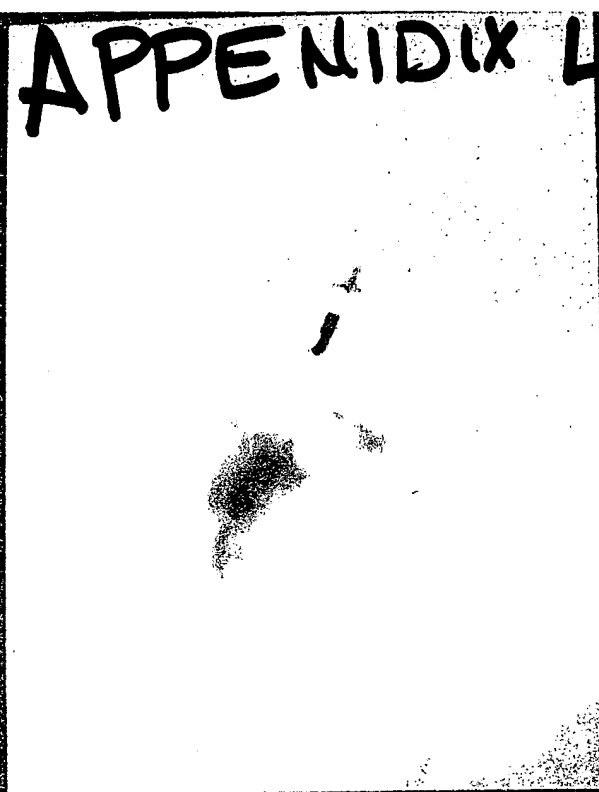


Appendix 5



Appendix K

APPENDIX L



MAY 12, 2001

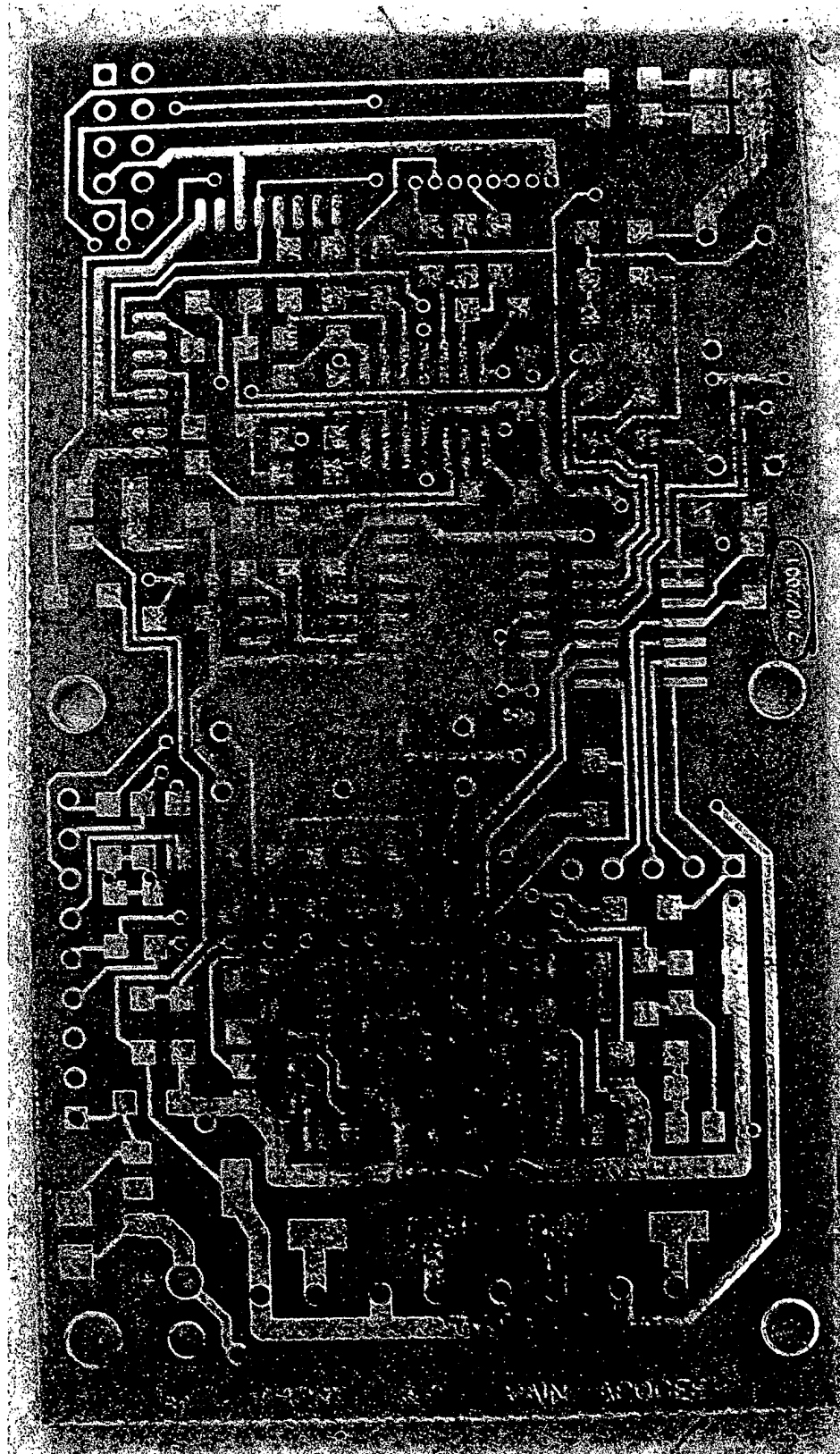
ROCKWELL AUTONETICS FLIGHT COMPUTER

6/22/2001

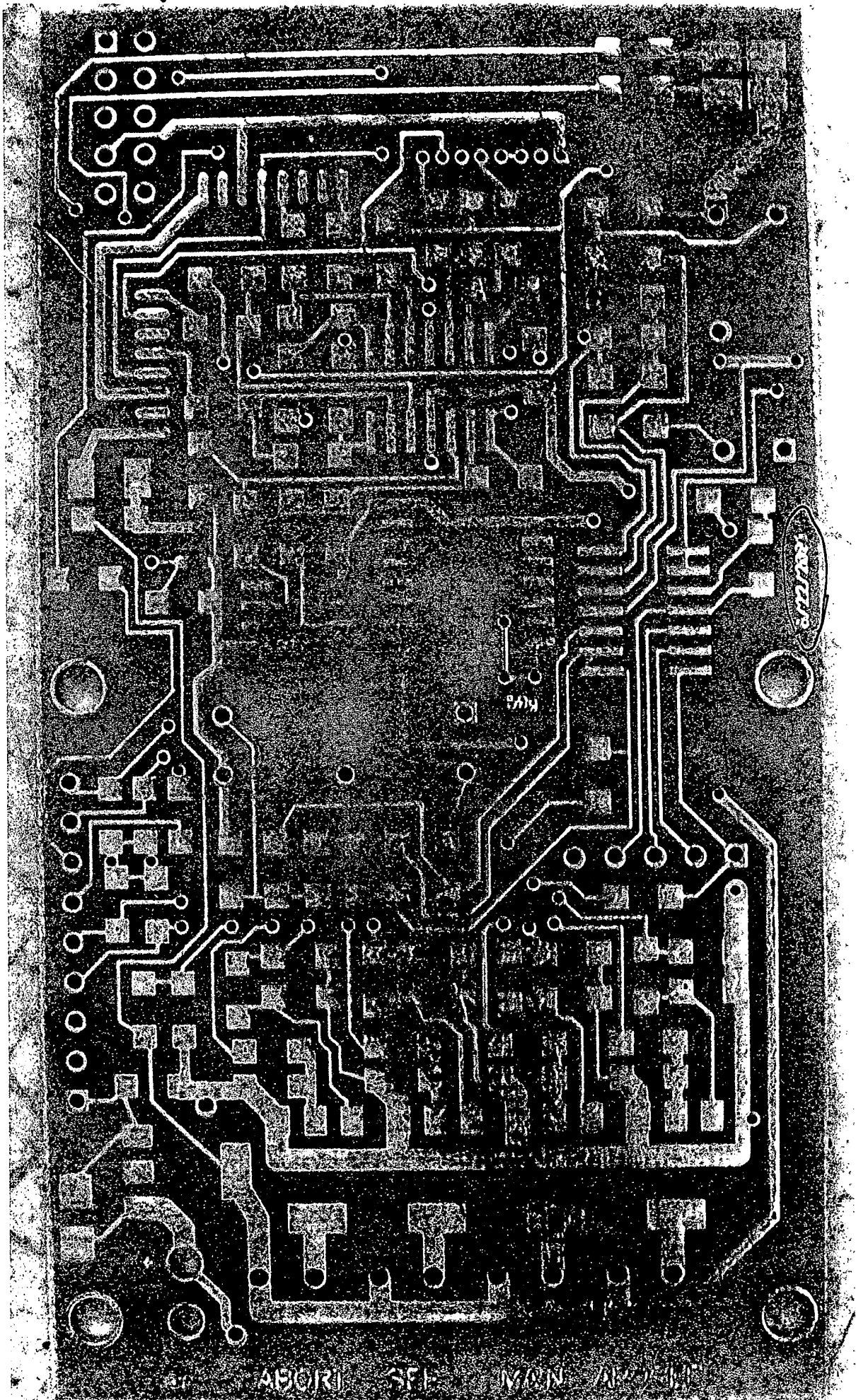
BAT ABORT SEP MAIN APOGEE

6/22/2001

APPENDIX N



APPENDIX O



Appendix P

Sent Items - Outlook Express - Main Identity

File Edit View Tools Message Help

Create Mail Reply Reply All Forward Print Delete Send/Recv Addresses Find

Write Message

To	Subject	Sent	Account
fredwork	Flight	11/12/2001 8:43 AM	keoblaxto Mail Account
fredwork	Flight stuff	11/12/2001 11:45 AM	keoblaxto Mail Account
Holthaus, Mark J	Machining	11/13/2001 8:02 AM	keoblaxto Mail Account
Mark Holthaus; John Garv...	Last weekend's flights	11/13/2001 10:21 AM	keoblaxto Mail Account
fredwork	Rocket and model plane pa...	11/14/2001 9:04 AM	keoblaxto Mail Account
fredwork	My rocket changes to MIGAL	11/15/2001 12:31 PM	keoblaxto Mail Account
fredwork	Magnetic field database	11/15/2001 2:38 PM	keoblaxto Mail Account
rocketa@hollinet.com	Re: Last weekend's flights	11/16/2001 7:38 AM	keoblaxto Mail Account
fredwork	Patent stuff	11/16/2001 10:43 AM	keoblaxto Mail Account
rocketa@hollinet.com	Re: Last weekend's flights	11/16/2001 3:43 PM	keoblaxto Mail Account
fredwork	Patent re-hash	11/19/2001 1:40 PM	keoblaxto Mail Account
fredwork	Patent 2	11/19/2001 1:55 PM	keoblaxto Mail Account
ken@fisherlight.com	Additional MIGAL claims	11/19/2001 2:30 PM	keoblaxto Mail Account
Holthaus, Mark J	Re:	11/19/2001 2:35 PM	keoblaxto Mail Account
Ken	Migal	11/19/2001 2:57 PM	keoblaxto Mail Account
fredwork	Migal	11/19/2001 3:03 PM	keoblaxto Mail Account
Holthaus, Mark J	Re:	11/19/2001 3:16 PM	keoblaxto Mail Account
Ken	Fw: invoice	11/19/2001 5:00 PM	keoblaxto Mail Account
Mark J. Holthaus	Re: More Names for the PR...	11/19/2001 5:35 PM	keoblaxto Mail Account
Bob Jeffs	Balloons	11/20/2001 10:31 AM	keoblaxto Mail Account
fredwork	A couple of things	11/20/2001 10:46 AM	keoblaxto Mail Account

From: Kevin Baxter **To:** fredwork
Subject: Rocket and model plane patent

2724 message(s), 0 unread Working Online

Start 2nd Response to ... Sent Items 0 untitled - Paint

Sent Items - Outlook Express - Main Identity

File Edit View Tools Message Help

Create Mail Reply Reply All Forward Print Delete Send/Recv Addresses Find

Sent Items

To	Subject	Sent	Account
Ken S. Fisher	Fw: Check out "Bin Laden ...	10/1/2001 1:47 PM	keoblaxto Mail Account
Holthaus, Mark J	Re: Rocket	10/2/2001 11:13 AM	keoblaxto Mail Account
Holthaus, Mark J	Re: Rocket	10/2/2001 2:00 PM	keoblaxto Mail Account
Holthaus, Mark J	Phone number	10/3/2001 9:09 AM	keoblaxto Mail Account
Holthaus, Mark J	Re: Phone number	10/3/2001 10:21 AM	keoblaxto Mail Account
Holthaus, Mark J	bulkhead	10/5/2001 10:53 AM	keoblaxto Mail Account
fredwork	Bio	10/5/2001 11:34 AM	keoblaxto Mail Account
Tim Icelton	4k CAD drawing	10/8/2001 10:38 AM	keoblaxto Mail Account
fredwork	telemetry	10/9/2001 11:50 AM	keoblaxto Mail Account
Holthaus, Mark J	Weights	10/9/2001 1:39 PM	keoblaxto Mail Account
fredwork	Levine patent	10/10/2001 8:14 AM	keoblaxto Mail Account
Bob Jeffs	Basket repair	10/10/2001 10:02 AM	keoblaxto Mail Account
Baxter, Krista	Re: you out there?	10/11/2001 8:44 AM	keoblaxto Mail Account
Bill Studenmund	Stepped parabola	10/11/2001 10:42 AM	keoblaxto Mail Account
Krista Baxter; Kathi and fa...	Ava	10/12/2001 8:54 AM	keoblaxto Mail Account
fredwork	Trip	10/12/2001 9:00 AM	keoblaxto Mail Account
Bill Studenmund	Parabolics	10/12/2001 1:04 PM	keoblaxto Mail Account
Holthaus, Mark J	Tank ends	10/16/2001 8:18 AM	keoblaxto Mail Account
Holthaus, Mark J	Phone number	10/16/2001 9:09 AM	keoblaxto Mail Account
Raber, Steve	Bin Laden	10/16/2001 11:04 AM	keoblaxto Mail Account
tim	Bin Laden	10/19/2001 3:03 PM	keoblaxto Mail Account

From: Kevin Baxter **To:** fredwork
Subject: telemetry

2724 message(s), 0 unread

Working Online

Start 2nd Response to... Sent Items: 0 untitled - Paint

Sent Items - Outlook Express - Main Identity

File Edit View Tools Message Help

Create Mail Reply Reply All Forward Print Delete Send/Recv Addresses Find

Sent Items

	To	Subject	Sent	Account
0	dave; Jeff Barnes; Erin; Fr... Holthaus, Mark J	Mark Marshal sighting Re: Mark Marshal sighting	8/30/2001 9:28 AM 8/30/2001 1:43 PM	keobloxto Mail Account keobloxto Mail Account
0	fredwork jeff jakob	Xenon PCB Re: Mark Marshal sighting	8/30/2001 1:48 PM 8/30/2001 2:22 PM	keobloxto Mail Account keobloxto Mail Account
0	fredwork	PCB	8/31/2001 9:38 AM	keobloxto Mail Account
0	Krista Baxter	Ava	8/31/2001 12:25 PM	keobloxto Mail Account
	fredwork	PCB Progress?	9/4/2001 10:25 AM	keobloxto Mail Account
	Ben	Progress	9/4/2001 2:52 PM	keobloxto Mail Account
	Wedge Oldham	High Power coverage	9/10/2001 1:35 PM	keobloxto Mail Account
0	fredwork	Trip	9/10/2001 1:43 PM	keobloxto Mail Account
0	Ken S. Fisher	Fw: Xenon Remote Control	9/10/2001 1:47 PM	keobloxto Mail Account
	hidehiko kuroda	Re: unbelievable	9/12/2001 6:56 AM	keobloxto Mail Account
0	Ben	Fw: BALLS Launch	9/13/2001 11:34 AM	keobloxto Mail Account
	Ben	Re: MARS pull out of BALL...	9/13/2001 4:03 PM	keobloxto Mail Account
	Ben	Re: MARS pull out of BALL...	9/14/2001 8:31 AM	keobloxto Mail Account
0	Bill Studenmund	Reflector	9/17/2001 9:18 AM	keobloxto Mail Account
	fredwork	PCB	9/17/2001 10:09 AM	keobloxto Mail Account
0	dad; Kathi and family Goo...	Ava	9/19/2001 12:12 PM	keobloxto Mail Account
0	fredwork	Trip	9/19/2001 12:14 PM	keobloxto Mail Account
	Fred	Reflector	9/19/2001 3:03 PM	keobloxto Mail Account
	Bob Jeffs	Reflectors	9/19/2001 3:15 PM	keobloxto Mail Account

From: Kevin Baxter To: fredwork
Subject: PCB Progress?

2724 message(s), 0 unread

Working Online

Start 2nd Response to O... Sent Items - Out... untitled - Paint

Sent Items - Outlook Express - Main Identity

File Edit View Tools Message Help

Create Mail Reply Reply All Forward Print Delete Send/Recv Addresses Find

Sent Items

	To	Subject	Sent	Account
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	Holthaus, Mark J	Re: Machining	11/26/2001 1:59 PM	keoblaxto Mail Account
	Garvey, John	RRS weekend	11/26/2001 3:56 PM	keoblaxto Mail Account
	Garvey, John	Re: RRS weekend	11/27/2001 9:08 AM	keoblaxto Mail Account
	fredwork	RRS	11/27/2001 9:58 AM	keoblaxto Mail Account
0	Holthaus, Mark J	Test Stand	11/28/2001 12:36 PM	keoblaxto Mail Account
	mhalter@ridgenet.net	MTA	11/28/2001 1:10 PM	keoblaxto Mail Account
	fredwork	Labview	11/28/2001 2:24 PM	keoblaxto Mail Account
0	Palmatiers; Krista Baxter; ...	Ava	11/29/2001 10:25 AM	keoblaxto Mail Account
	fredwork	Patents	11/29/2001 10:36 AM	keoblaxto Mail Account
0	Harold	Test stand	11/29/2001 10:49 AM	keoblaxto Mail Account
	fredwork	Money	11/30/2001 9:04 AM	keoblaxto Mail Account
	Bill Colburn; Harold; Holth...	Progress	11/30/2001 9:36 AM	keoblaxto Mail Account
	FRED HOLMES	Re: Apps	11/30/2001 9:53 AM	keoblaxto Mail Account
	fredwork	Money	11/30/2001 1:53 PM	keoblaxto Mail Account
0	Jeff Jakob	Story from the horse's mouth	12/2/2001 4:07 PM	keoblaxto Mail Account
	Ben	Re: MARS hybrid flies!!! Th...	12/2/2001 4:10 PM	keoblaxto Mail Account
	Holthaus, Mark J	Classes	12/3/2001 9:06 AM	keoblaxto Mail Account
0	Palmatiers; Krista Baxter; ...	Ava thinks she big stuff	12/3/2001 1:53 PM	keoblaxto Mail Account
	fredwork	Op amp theory	12/4/2001 8:39 AM	keoblaxto Mail Account
	John Garvey	Last weekend	12/4/2001 10:59 AM	keoblaxto Mail Account

From: Kevin Baxter To: fredwork
Subject: RRS

2724 message(s), 0 unread

Working Online

Start Sent Items - Outlook

P. 4

RECEIVED

DEC 04 2003

OFFICE OF PETITIONS

Temp

File Edit View Go Favorites Help

Back Forward Up Cut Copy Paste Undo Delete Properties Views

Links Customize Links Free Hotmail Windows Media Windows AOL for Broadband

Address C:\FRED\Temp

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fc1.bas	33KB	BAS File	3/9/2002 12:00 AM
Gant02.bas	21KB	BAS File	3/9/2002 12:00 AM
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Actuator.bas	2KB	BAS File	2/13/2002 12:00 AM
gant.bas	19KB	BAS File	2/13/2002 12:00 AM
Wind.bas	6KB	BAS File	2/13/2002 12:00 AM
Amp.pcb	22KB	PCB File	1/25/2002 12:00 AM
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Gh.old	23KB	OLD File	1/24/2002 12:00 AM
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Lbc.bas	5KB	BAS File	8/27/2001 12:00 AM
Dmxbalon.pcb	25KB	PCB File	8/1/2001 12:00 AM
Touch1.pcb	91KB	PCB File	7/26/2001 12:00 AM
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53 object(s) 4.88MB My Computer

Start 2nd Res... My Com... (C:) Fred Temp

Appendix Q